INDEX

Page

Abortion, infectious, infection and reinfection experiments ... 609–618
Acetaldehyde content of lemon pulp, effect of different storage temperatures ... 604–605, 607
Adirondack section, certain forest soils, cation exchange properties. R. F. Chandler, Jr. 491–505
Alfalfa—
bacterial wilt, causal organism ... 59, 65
feeding to rabbits for control of sweetclover disease, experiments ... 213–215
inbred and hybrid strains, survival under ice sheet ... 68–70
protective action, alleged, against hemorrhagic sweetclover disease. William K. Smith ... 211–215
strains, differential survival under an ice sheet. R. A. Brink, W. Keller, and C. Eisenhart ... 59–71
winter injury, studies ... 59–70
Alternaria solani, inoculation of potato seed pieces, effect on infestation by maggots, studies ... 895–898
Amino acids in the corn kernel. Frank A. Csonka ... 765–768
Ammonia, effect on growth of *Aspergillus niger*, experiments ... 740, 745, 746
Ammonium acetate solution, effect on cation exchange in forest soils, experiments ... 493–503
Anthomyiids, symbiosis and role in spreading potato blackleg organism, studies ... 889–901
Aphanomyces euteiches—
cause of root rot of canning peas ... 579–583
infection of canning peas, relation to fertilizer treatment, studies in Wisconsin ... 579–590
Aphids—
transmission of sugarcane mosaic. H. D. Tate and S. R. Vandenberg ... 73–79
vectors of sugarcane mosaic, occurrence in Puerto Rico ... 76–77
See also under specific host.
Aphis maidis, transmission of sugarcane mosaic, experiments ... 73–78
Apple—
anthracnose—
distribution and occurrence, comparison with perennial canker ... 637–639
fungus, comparison with perennial canker fungus. J. R. Kienholz ... 635–665
host relations ... 639–641
fungi, taxonomy ... 656–663
orchards, phytophthora collar rot, occurrence in Indiana ... 161–162
perennial canker—
distribution and occurrence, comparison with anthracnose ... 637–639
fungus, comparison with anthracnose fungus. J. R. Kienholz ... 635–665
host relations ... 639–641
rots, comparisons ... 655–656
trees—
branches, resistance to *Phytophthora cactorum* ... 175–176
canker tissue, infectious nature ... 163
collar rot. R. C. Baines ... 159–184
grafted, stock and scion components, interaction in relation to *Phytophthora cactorum* ... 176–177
Grimes Golden—
age and vigor, relation to infection by *Phytophthora cactorum* ... 175
decortication treatment for cankers ... 179
graft union, height, effect on infection by *Phytophthora cactorum* ... 178
infested with phytophthora collar rot, pathological histology ... 163
phytophthora—
collar rot, control ... 181
collar rot, history ... 159–161
collar rot, symptoms ... 162–163
trunk canker. R. C. Baines ... 159–184

Page

Apple—Continued.
trees—Continued.
resistance and susceptibility to collar rot, factors affecting ... 175–177
varieties, susceptibility to *Phytophthora cactorum*, experiments ... 174–175
Ascochyta pisi—
control by chemical seed treatments ... 691–692
elimination from hairy vetch seed by heat treatments ... 690–691
location in hairy vetch seeds ... 690
longevity in hairy vetch seed—
and occurrence. Willard Crosier ... 683–697
comparison with that of fungus, experiments ... 688
experiments ... 687–688
occurrence in hairy vetch seed—
commercial stocks ... 686–687
imported lots ... 685
Ash content of oat plant at different stages of growth ... 333, 343
Asparagus—
deterioration rate, effect of temperature on, experiments ... 42–58
sugar losses at different temperatures, experiments ... 53–57
Aspergillus niger—
assimilability, effect of admixture of carbon compounds on, experiments ... 758–759
carbon nutrition, relation to trace-element and accessory requirements. Robert A. Steinberg ... 749–763
growth—
effects of—
external supply of metabolic products, experiments ... 759–761
nitrate reduction products ... 740–742, 745–746
nitrogen compounds and trace elements. Robert A. Steinberg ... 731–748
with glycerol, experiments ... 751–754, 760–761
with sources of carbon other than glycerol, experiments ... 754–758, 760–761
post-growth metabolic products in culture, tests ... 742–743
Austin, Lloyd, and Day, Besse B.: A Three-Dimensional Lattice Design for Studies in Forest Genetics ... 101–119

Bacillus—
mesentericus, in meat, destruction by pressure cooking, experiments ... 466–474
phytophthorus. *See* Potato blackleg.
radiobacter, production of growth substance on peptone broth, experiments ... 519–524
Bacteria—
pathogenic, association with different stages of seed-corn maggot ... 893–895
soil, inoculation of potato seed pieces, influence on decay and maggot injury, experiments ... 904–906
Bacterial wilt of alfalfa, causal organism ... 59, 65
Bacterium—
solanacearum—
cause of wilt disease of plants ... 429
host range studies. T. E. Smith ... 429–440
populations in legumes following stem inoculation, determinations ... 436
soil infection, effect on spread of organism ... 429–436, 438
tumefaciens, susceptibility of Cupressaceae to, inoculation studies ... 919–925
Baines, R. C.: Phytophthora Trunk Canker or Collar Rot of Apple Trees ... 159–184
Bang's disease, infection and reinfection experiments. B. H. Edgington and C. R. Donham ... 609–618
Barber, G. W., and Dicke, F. F.: Effect of Temperature and Moisture on Overwintering Pupae of the Corn Earworm in the Northeastern States ... 711–723
Barium acetate solution, effect on cation exchange in forest soils, experiments ... 493–503

Barley— Page
pollen—
and ovules, viability after cold storage. Merritt N. Pope 453–463
viability in refrigerated spikes, greenhouse experiments 456–458
seed—
in storage, effect of relative humidity on viability, moisture content, and respiration. D. W. Robertson, A. M. Lute, and Robert Gardner 281–291
production after cold storage of emasculated spikes, greenhouse experiments 458–462
production of stored unemasculated spikes, greenhouse experiments 454–456
Barrenness, mutational, in Montmorency cherry, photosynthetic studies. J. W. Crist 547–553
BEAUMONT, J. H.: An Analysis of Growth and Yield Relationships of Coffeetrees in the Kona District, Hawaii 223–235
BECKER, CATHARINE L.: Inheritance Studies in the Interspecific Cross *Solanum demissum* Lindl.×*S. tuberosum* L. 23–39
BERRIGAN, DOROTHY, and NELSON, CASPER I.: Effectiveness of Heat Penetration in the Canning of Meat in the Home by the Pressure Cooker 465–474
Blood, dried, effect on nutrition of *Zea mays*, foliar diagnosis study 303–313
BONDE, REINER: The Role of Insects in the Dissemination of Potato Blackleg and Seed-Piece Decay 889–917
Bordeaux mixture, prevention of collar rot of apple trees, tests 178–179
Boron, influence on flower-bud development in cotton. With K. T. Holley and T. G. Dulin 541–545
Bovine venereal trichomoniasis, experimental transmission. Charles W. Rees and George G. Garlick 769–775
BRINK, R. A., KELLER, W., and EISENHART, C.: Differential Survival of Alfalfa Strains Under an Ice Sheet 59–71
BROWN, D. E., LUNN, W. M., MCMURTREY, J. E., Jr., and GARNER, W. W.: Tobacco Following Bare and Natural Weed Fallow and Pure Stands of Certain Weeds 829–845
Brucella abortus, infection and reinfection experiments 609–618
Brussels sprouts, deterioration rate, effect of temperature on, experiments 42–58
Bulls, dairy, transmission of venereal trichomoniasis, experiments 771–774
BYALL, S., VENTRE, EMIL K., and WALTON, C. F., Jr.: Jellying and Crystallization of Sirups Made From Different Parts of the Sorgo Stalk at Different Stages of Maturity 139–150

Cabbage—
aphid, transmission of mosaic virus, tests 385
mosaic—
disease—
R. H. Larson and J. C. Walker 367–392
effect of temperature 386
relation to cabbage varieties 388–389
symptoms 370–373
transmission experiments 375–385
hosts, list 377–380
virus—
overwintering 388, 389
properties 386–387
relation to cabbage seed 387–388
transmission tests 385
seed, relation to mosaic virus 387–388
varieties, relation to mosaic disease 388–389
worm, imported, transmission of mosaic virus, tests 385
Cankers, phytophthora trunk—
infectious nature 163
treatment with—
sodium arsenite solution, experiments 179
zinc chloride solution, experiments 179
Canning meat in home by pressure cooker, effectiveness of heat penetration. Casper I. Nelson and Dorothy Berrigan 465–474
Carbon nutrition of *Aspergillus niger*, relation to trace-element and accessory requirements. Robert A. Steinberg 749–763

Page
CARLYLE, E. C., and FRAPS, G. S.: Relation of Gain in Weight to Gain in Energy Content of Growing Chicks 777–781
Carotinaia cyperi, transmission of sugarcane mosaic, experiments 73–78
CARROLL, W. E., and ROBERTS, E.: A Study of Hybrid Vigor in a Cross Between Poland China and Duroc Jersey Swine 847–854
Cation exchange properties of certain forest soils in Adirondack section. R. F. Chandler, Jr. 491–505
Cattle—
sweetclover disease, control experiments 211–215
See also Bulls; Cows; Heifers.
Cecil clay loam, solution concentration in, effect of fertilizers 86–96
Celery, deterioration rate, effect of temperature on, experiments 42–58
Cellulose, percentage in oat plant at different stages of growth 340–342, 359–360
Cereals, stored, effect of relative humidity on viability, moisture control, and respiration 281–291
Ceresan treatment of cereal seeds, effect on viability 282–284
Chamaecyparis, crown gall infection, susceptibility to, inoculation studies 919–920, 924
CHANDLER, R. F., Jr.: Cation Exchange Properties of Certain Forest Soils in the Adirondack Section 491–505
Cherry, Montmorency—
bud mutants, variation and correlation. J. W. Crist 393–395
mutational barrenness, photosynthetic studies. J. W. Crist 547–553
spurs, chemical analysis 548–550
trees, barren, fruitful and deflorated, growth measurements 552
Chicks, growing, gain in weight, relation to gain in energy content. G. S. Fraps and E. C. Carlyle 777–781
CHRISTENSEN, JOHN F.: Sporulation and Viability of Oöcysts of *Eimeria arloingi* From the Domestic Sheep 527–534
Chromosomes, corn, knob positions. A. E. Longley 475–490
Climate—
effect upon winter pause of White Leghorn pullets in California 208
relation to seasonal abundance of corn earworm 252–255
Clostridium botulinum in meat, destruction by pressure cooking, experiments 466–474
Clover leafhopper, vector of potato yellow dwarf virus 275, 276
Clubroot, resistance in varieties of turnip and rutabaga. J. C. Walker 815–827
Coccidiosis, ovine, prevention and control, study 527–534
COCHRAN, H. L.: Growth and Distribution of Roots of the Perfection Pimiento in Georgia 185–197
Cockroach, American. See *Periplaneta americana*.
Coffee—
production in Kona district, Hawaii 217–219
yields, relation to rainfall in Kona district, Hawaii. L. A. Dean 217–222
Coffeetrees, growth—
and yield in Hawaii, experiments 226–234
and yield relationships in Kona district, Hawaii, analysis. J. H. Beaumont 223–235
habit and management in Hawaii, description 224–226
Cold storage—
effect on viability of pollen and ovules of barley. Merritt N. Pope 453–463
previous, effect on deterioration rate of fresh vegetables at higher temperatures 52–53
Conifers—
dormancy, relation to drought resistance 18–19
drought resistance—
improvement by regulating moisture supply 9–15
influence of moisture supply. Hardy L. Shirley and Lloyd J. Meuli 1–21
permanence, tests 15–17
testing method 3–9

Page
Conifers—Continued.
overexposure to soil dryness, effect, experiments 17–18
root development, relation to drought resistance 18
susceptibility to crown gall as determined by artificial inoculation 919–925
Connecticut—
climate and soil 410–411
land utilization and forest management 411–412
soil characteristics, topography, and lesser vegetation, relation to site quality of second-growth oak stands in. Herbert A. Lunt 407–428
CONRAD, JOHN P.: Retention of Some Phosphorus Compounds by Soils as Shown by Subsequent Plant Growth 507–518
Cooking, pressure, effectiveness in sterilizing meat, experiments 465–474
Coqui, host of aphid vector of sugarcane mosaic in Puerto Rico 76
Corn—
amino acid composition, determinations 765–768
chromosome behavior, relation to knob formation, studies 475–490
chromosomes—
arms, length 478, 483
knob—
bearing regions 481–486, 487–490
frequency 480, 487–490
positions. A. E. Longley 475–490
positions, description 478–480, 487–490
length 475–478, 487–490
earworm—
egg and larval infestations, experiments at Charlottesville, Va 239–241
eggs, seasonal abundance in relation to abundance of corn 243–244
hibernating quarters, description 711
infestation, seasonal abundance in field corn 245–250
life history, description 241–242
pupae—
effect of being embedded in ice 719
effect of earthworm activity and of being embedded in soil 719–721
effect of thermal conductivity in soils 721–722
in hibernation, effect of availability of air 718–719
overwintering in Northeastern States, temperature and moisture effects. G. W. Barber and F. F. Dicke 711–723
resting on dry and wet mediums, comparative winter mortality 715–718
submergence in water, effects 714–715
seasonal—
abundance. F. F. Dicke 237–257
abundance, relation to climate 252–255
damage 250–252
kernel, amino acids in. Frank A. Csonka 765–768
sweet—
deterioration rate, effect of temperature on, experiments 42–58
infestation with earworm—
eggs, experiments 239–240
larvae, experiments 240–241, 242–243
sugar losses at different temperatures, experiments 53–57
Cotton, flower-bud development, influence of boron. K. T. Holley and T. G. Dulin 541–545
Cows—
inoculation with—
Brucella abortus prior to breeding and reexposed during second pregnancy, experiments 617–618
venereal trichomoniasis, experiments 769–771, 774
See also Cattle; Heifers.
CRIST, J. W.:
Photosynthetic Studies of Mutational Barrenness in the Montmorency Cherry 547–553
Variation and Correlation in Bud Mutants of the Montmorency Cherry 393–395
CROSIER, WILLARD: Occurrence and Longevity of *Ascochyta pisi* in Seeds of Hairy Vetch 683–697

Page
Crown gall—
bacteria—
and related nongall-forming organisms, production of growth substance on peptone broth. S. B. Locke, A. J. Riker, and B. M. Duggar 519–525
attentuated, production of growth substance on peptone broth, experiments 519–524
virulent, production of growth substance on peptone broth, experiments 519–524
See also under specific kinds.
susceptibility of Cupressaceae species as determined by artificial inoculation. Clayton O. Smith 919–925
tissue, growth substance originating in, nature. S. B. Locke, A. J. Riker, and B. M. Duggar 535–539
See also under specific host.
Crown rust in oats, correlated inheritance of reaction to, and other characters. James H. Torrie 783–804
Crucifers—
cabbage mosaic disease, symptoms 374–375
susceptible to cabbage mosaic disease, list 377–378
virus diseases, research work 367–369
Crystallization of sirups made from sorgo stalks, factors affecting 140–150
CSONKA, FRANK A.: Amino Acids in the Corn Kernel 765–768
Cupressaceae species, susceptibility to crown gall as determined by artificial inoculation. Clayton O. Smith 919–925
Cupressus, crown gall infection, susceptibility to, inoculation studies 919–922

Dairy herds, infection by venereal trichomoniasis, control recommendations 774–775
DAVIS, B. L., PHILLIPS, MAX, GOSS, M. J., and STEVENS, H.: Composition of the Various Parts of the Oat Plant at Successive Stages of Growth, With Special Reference to the Formation of Lignin 319–366
DAY, BESSE B., and AUSTIN, LLOYD: A Three-Dimensional Lattice Design for Studies in Forest Genetics 101–119
DEAN, L. A.: Relationships Between Rainfall and Coffee Yields in the Kona District, Hawaii 217–222
Deterioration rate of fresh vegetables, effect of temperature on. Hans Platenius 41–58
Dextrose, crystallization in sirup made from sorgo stalks, experiments 147, 149, 150
DICKE, F. F.:
Seasonal Abundance of the Corn Earworm 237–257
and BARBER, G. W.: Effect of Temperature and Moisture on Over-Wintering Pupae of the Corn Earworm in the Northeastern States 711–723
DIETER, C. E., and WILSON, H. F.: Injury to Pea Vines Caused by the Feeding of the Pea Aphid 805–814
DONHAM, C. R., and EDGINGTON, B. H.: Infection and Reinfection Experiments With Bang's Disease 609–618
Drought—
machines, construction and use to test drought resistance of conifers 3–9
resistance of conifers, influence of moisture supply. Hardy L. Shirley and Lloyd J. Meuli 1–21
DUGGAR, B. M., LOCKE, S. B., and RIKER, A. J.:
Production of Growth Substance on Peptone Broth by Crown Gall Bacteria and Related Nongall-Forming Organisms 519–525
The Nature of Growth Substance Originating in Crown Gall Tissue 535–539
DULIN, T. G., and HOLLEY, K. T.: Influence of Boron on Flower-Bud Development in Cotton 541–545

Earworm. *See* under specific host.
EDGINGTON, B. H., and DONHAM, C. R.: Infection and Reinfection Experiments With Bang's Disease 609–618

Page

Eggs from pullets in different latitudes, effect of temperature on size. D. C. Warren ... 441-452
Eimeria arloingi, oöcysts from domestic sheep, sporulation and viability. John F. Christensen ... 527-534
EISENHART, C., BRINK, R. A., and KELLER, W.: Differential Survival of Alfalfa Strains Under an Ice Sheet ... 59-71
Electricity, use in stimulation of isolated heart preparations from *Periplaneta americana*. J. Franklin Yeager ... 121-137
Energy content, gain in growing chicks, relation to gain in weight. G. S. Fraps and E. C. Carlyle ... 777-781
Environment, effects upon photoperiodic responses of plants, further studies. R. H. Roberts and B. Esther Struckmeyer ... 699-709
Equipment for producing maple sugar, preparation and painting. C. O. Willits and C. J. Tressler, Jr ... 151-158
Escherichia coli in meat, destruction by pressure cooking, experiments ... 466-474

Fallow—
  bare and natural weed, and pure stands of certain weeds, tobacco following. W. M. Lunn, D. E. Brown, J. E. McMurtrey, Jr., and W. W. Garner ... 829-845
  weed, value to subsequent tobacco crops ... 838-844
Fertility, effect on root rot of canning peas in Wisconsin. J. C. Walker and F. L. Musbach ... 579-590
Fertilizer—
  materials, commercial, effect on concentration of soil solution ... 86-97
  mixtures—
    formulas ... 95-97
    single- and double-strength, formulas ... 96-97
  placement, effect on root rot of canning peas in Wisconsin. J. C. Walker and F. L. Musbach ... 579-590
Fertilizers—
  effect on—
    salt content of soil solution, study procedure ... 81-86
    yields of millet, relation to different hydrogen-ion concentrations ... 628-630
  various grades, effect on salt content of soil solution. Lawrence M. White and William H. Ross ... 81-99
Flower-bud development in cotton, influence of boron on. K. T. Holley and T. G. Dulin ... 541-545
Foliar diagnosis—
  method, criticisms and validity ... 303
  study of effect of three nitrogen carriers on nutrition of *Zea mays*. Walter Thomas and Warren B. Mack ... 303-313
Forest—
  genetics, studies, three-dimensional lattice design. Besse B. Day and Lloyd Austin ... 101-119
  nursery—
    beds, lattice design—
      application of correction measurements to germination data ... 114-118
      correcting measurements, outline of procedure ... 106-113
      description ... 105-106
      theoretical basis and description ... 102-106
    progeny measurements ... 102-118
  soils in Adirondack section, cation exchange properties. R. F. Chandler, Jr ... 491-505
  types in New York, Adirondack section, description ... 491-492
Formulas for determining theoretical effects of certain genetic factors upon inheritance of quantitative characters, with special reference to a study of *Lycopersicon* hybrid. LeRoy Powers ... 555-577
FRAPS, G. S., and CARLYLE, E. C.: Relation of Gain in Weight to Gain in Energy Content of Growing Chicks ... 777-781
Fruit development in *Macadamia ternifolia*. M. E. Hartung and W. B. Storey ... 397-406
Furfural, content of oat plant at different stages of growth ... 339, 341, 345-348, 362
Fusarium oxysporum—
  cause of near-wilt of peas ... 591, 592-599
  temperature relations, culture studies ... 592-593

Page

Gallium, effect on growth of *Aspergillus niger*, experiments ... 735, 745, 760
GARDNER, ROBERT, ROBERTSON, D. W., and LUTE, A. M.: Effect of Relative Humidity on Viability, Moisture Content, and Respiration of Wheat, Oats, and Barley Seed in Storage ... 281-291
GARLICK, GEORGE G., and REES, CHARLES W.: Experimental Transmission of Bovine Venereal Trichomoniasis ... 769-775
GARNER, W. W., LUNN, W. M., BROWN, D. E., and MCMURTREY, J. E., Jr.: Tobacco Following Bare and Natural Weed Fallow and Pure Stands of Certain Weeds ... 829-845
Genetics—
  factors, inheritance of quantitative characters, formulas for determining theoretical effects. LeRoy Powers ... 555-574
  forest, studies by means of three-dimensional lattice design. Besse B. Day and Lloyd Austin ... 101-119
Georgia, Perfection pimiento, growth and distribution of roots. H. L. Cochran ... 185-197
GILE, P. L.: Growth of Millet in Quartz Sand and in Sand-Soil Mixtures ... 619-633
Glocosporium perennans—
  apothecia, discovery ... 660
  apothecial stages, comparison with those of *Neofabraea malicorticis* ... 660-663
  comparison with *Neofabraea malicorticis* ... 635-663
  culture studies, comparison with *Neofabraea malicorticis* ... 641-655
  taxonomy ... 656-663
  See also *Neofabraea perennans* comb nov.
Glycerol, effect on growth of *Aspergillus niger*, experiments ... 751-754, 760-761
GOSS, M. J., PHILLIPS, MAX, DAVIS, B. L., and STEVENS, H.: Composition of the Various Parts of the Oat Plant at Successive Stages of Growth, With Special Reference to the Formation of Lignin ... 319-366
Grains, stored, effect of relative humidity on viability, moisture content, and respiration ... 281-291
Great Plains, pines, resistance to drought, experiments ... 1-20

Ham conformation, variation, significance. R. L. Hiner and O. G. Hankins ... 293-302
Hams—
  measurements, relationships shown by correlation ... 298-301
  plumpness index, determination and use ... 293-302
  weight, relation to plumpness ... 295
HANKINS, O. G., and HINER, R. L.: Significance of Variation in Ham Conformation ... 293-302
HARTUNG, M. E., and STOREY, W. B.: The Development of the Fruit of *Macadamia ternifolia* ... 397-406
Hawaii—
  Agricultural Experiment Station, *Macadamia ternifolia* fruit investigations ... 397-406
  Kona district—
    coffee production ... 217-219
    coffee yields, relation to rainfall. L. A. Dean ... 217-222
    coffeetrees, growth and yield relationships, analysis. J. H. Beaumont ... 223-235
    description ... 217-219
    rainfall records ... 219-220
Hay, sweetclover, toxicity to livestock, control experiments ... 211-215
Heart preparations, isolated, from *Periplaneta americana*, electrical stimulation. J. Franklin Yeager ... 121-137
Heat penetration, effectiveness in canning meat in home by pressure cooker. Casper T. Nelson and Dorothy Berrigan ... 465-474
Heifers—
  inoculation with—
    Brucella abortus—
      before first pregnancy and reexposed during second pregnancy, experiments ... 614-616, 617-618
      during different stages of pregnancy, experiments ... 610-612, 617-618
      prior to breeding and during pregnancy, experiments ... 612-613, 617-618

Page

Heifers—Continued.
inoculation with—Continued.
Brucella abortus—Continued.
prior to breeding and reexposed subsequently when not pregnant, experiments 613–614, 617–618
venereal trichomoniasis, experiments 769–771, 774
See also Cattle; Cows.
HINER, R. L., and HANKINS, O. G.: Significance of Variation in Ham Conformation 293–302
Hogs. *See* Pigs; Swine.
HOLLEY, K. T., and DULIN, T. G.: Influence of Boron on Flower-Bud Development in Cotton 541–545
Host range studies with *Bacterium solanacearum*. T. E. Smith 429–440
Humidity, relative, effect on viability, moisture content, and respiration of wheat, oats, and barley seed in storage. D. W. Robertson, A. M. Lute, and Robert Gardner 281–291
Hybrid vigor in Poland China × Duroc Jersey swine, study. E. Roberts and W. E. Carroll 847–854
Hydrogen-ion concentration, factor in increased yield of millet 626–630
Hylemyia—
cilicrura. *See* Seed-corn maggot.
spp., field inoculations of potato seed pieces 895–901
trichodactyla. *See* Seed-corn maggot.
Hysteroneura setariae, transmission of sugarcane mosaic, experiments 73–78

Ice sheet—
alfalfa strains under, differential survival. R. A. Brink, W. Keller, and C. Eisenhart 59–71
injury to alfalfa, irregular distribution 60–62
Idaho, northern, climatic factors, suitability for planting races of ponderosa pine 882–885
Inheritance—
in *Lycopersicon* hybrid, of quantitative characters, theoretical effects of certain genetic factors upon, formulas for determining. LeRoy Powers 555–577
in oats, of reaction to smuts, crown rust, stem rust, and other characters. James H. Torrie 783–804
in ponderosa pine, of progeny characters, 25-year test 855–886
in sorghum, of color, linkage study 727–730
studies in the interspecific cross *Solanum demissum* Lindl. × *S. tuberosum* L. Catharine L. Becker 23–39
Insect infestation, relation to decay of potato seed pieces 901–912
Insects—
dissemination of potato disease, studies 889–916
other than anthomyiids, role in spreading potato diseases, experiments 912–914
role in dissemination of potato blackleg and seed-piece decay. Reiner Bonde 889–917
transmission of cabbage mosaic, tests 385

Jellying of sirups made from sorgo stalks, factors affecting 140–150
Juniperus, crown gall infection, susceptibility to, inoculation studies 919–920, 922–923

KELLER, W., BRINK, R. A., and EISENHART, C.: Differential Survival of Alfalfa Strains Under an Ice Sheet 59–71
KIENHOLZ, J. R.: Comparative Study of the Apple Anthracnose and Perennial Canker Fungi 635–665
Knob positions on corn chromosomes. A. E. Longley 475–490

LAMB, C. A.: Further Studies on Root Characteristics of Winter Wheat in Relation to Winter Injury 667–681
Lambs, coccidiosis, prevention and control, study 527–534
LARSON, R. H., and WALKER, J. C.: A Mosaic Disease of Cabbage 367–392
Yellow Dwarf of Potato in Wisconsin 259–280

Page

Latitudes, different, pullets in, effect of temperature on size of eggs from. D. C. Warren 441–452
Lattice design, three-dimensional—
correction measurements, application to germination data 114–118
for studies in forest genetics. Besse B. Day and Lloyd Austin 101–119
Legumes, stem inoculation with *Bacterium solanacearum* 436
Lemon peel—
glycosides and acidity, effect of different storage temperatures 603–604, 607
reductase activity, effect of different storage temperatures 605–606, 607
Lemons—
acetaldehyde content, effect of different storage temperatures 604, 607
in storage, physiological studies. Erston V. Miller and Harold A. Schomer 601–607
sugar content in storage, physiological studies 602, 606–607
LERNER, I. MICHAEL, and TAYLOR, LEWIS W.: A Statistical Study of Winter Pause in White Leghorn Pullets 199–210
Lettuce, deterioration rate, effect of temperature on, experiments 42–58
Libocedrus, crown gall infection, susceptibility to, inoculation studies 919–920, 923
Lignin—
formation in oat plant—
relation to composition of various parts of plant at successive stages of growth. Max Phillips, M. J. Goss, B. L. Davis, and H. Stevens 319–366
theories 359–363
percentage in oat plant at various stages of growth 342–344
Lime content of *Zea mays*, foliar diagnosis study 308–309
Livestock—
sweetclover disease, control experiments 211–215
See also under specific kinds.
Loam. *See* under specific series.
LOCKE, S. B., RIKER, A. J., and DUGGAR, B. M.: Production of Growth Substance on Peptone Broth by Crown Gall Bacteria and Related Nongall-Forming Organisms 519–525
The Nature of Growth Substance Originating in Crown Gall Tissue 535–539
LONGLEY, A. E.: Knob Positions on Corn Chromosomes 475–490
LUNN, W. M., BROWN, D. E., MCMURTREY, J. E., Jr., and GARNER, W. W.: Tobacco Following Bare and Natural Weed Fallow and Pure Stands of Certain Weeds 829–845
LUNT, HERBERT A.: Soil Characteristics, Topography, and Lesser Vegetation in Relation to Site Quality of Second-Growth Oak Stands in Connecticut 407–428
LUTE, A. M., ROBERTSON, D. W., and GARDNER, ROBERT: Effect of Relative Humidity on Viability, Moisture Content, and Respiration of Wheat, Oats, and Barley Seed in Storage 281–291
Lycopersicon hybrid, inheritance of quantitative characters, formulas for determining theoretical effects of certain genetic factors upon. LeRoy Powers 555–577

Macadamia ternifolia—
flower, description 399–400
fruit, development—
M. E. Hartung and W. B. Storey 397–406
initial stages, description 400
intermediate stages, description 401–402, 405
pericarp development, description 402–403, 405
seed coat development, description 403–405
MACK, WARREN B., and THOMAS, WALTER: A Foliar Diagnosis Study of the Effect of Three Nitrogen Carriers on the Nutrition of *Zea mays* 303–313
MCMURTREY, J. E., Jr., LUNN, W. M., BROWN, D. E., and GARNER, W. W.: Tobacco Following Bare and Natural Weed Fallow and Pure Stands of Certain Weeds 829–845
Mannitol, effect on growth of *Aspergillus niger*, experiments 737–738, 758, 760–761

Page

Manure and lime, effect on nutrition of *Zea mays*, foliar diagnosis study 303-313
Maple—
  sirup, lead content, elimination experiments 151-158
  sugar, production equipment, preparation and painting. C. O. Willits and C. J. Tressler, Jr 151-158
Maryland, Upper Marlboro tobacco field station, experiments with fallow 831-844
Meat canning in home by pressure cooker, effectiveness of heat penetration. Casper L. Nelson and Dorothy Berrigan 465-474
Methoxyl, content of oat plant at different stages of growth 335-336, 343-344, 360-361
MEULI, LLOYD J., and SHIRLEY, HARDY L.: Influence of Moisture Supply on Drought Resistance of Conifers 1-21
Mid-Temperate Zone, temperature, effect on size of pullet eggs, data 442-445
MILLER, ERSTON V., and SCHOMER, HAROLD A.: Physiological Studies of Lemons in Storage 601-607
Millet—
  growth in quartz sand and in sand-soil mixtures. P. L. Gile 619-633
  yields—
    effect of hydrogen-ion concentration 626-630
    in sand and sand-soil mixtures, comparison 620-622
    produced—
      by mixing soil with quartz sand, explanations 630-632
      by soil admixtures, factors affecting 622-624, 626-628
      in quartz sand, factors affecting 624-626
Minnesota, Chippewa National Forest, drought resistance, experiments 1-20
Moisture—
  effect on—
    overwintering pupae of corn earworm in Northeastern States. G. W. Barber and F. F. Dicke 711-723
    root rot of canning peas in Wisconsin. J. C. Walker and F. L. Musbach 579-590
  relation to near-wilt of pea. Walter J. Virgin and J. C. Walker 591-600
  supply, influence on drought resistance of conifers. Hardy L. Shirley and Lloyd J. Meuli 1-21
Molybdenum, effect on growth of *Aspergillus niger*, experiments 732, 737, 745, 760
Mosaic—
  disease of cabbage. R. H. Larson and J. C. Walker 367-392
  of sugarcane, transmission by aphids. H. D. Tate and S. R. Vandenberg 73-79
  See also under specific host.
MUSBACH, F. L., and WALKER, J. C.: Effect of Moisture, Fertility, and Fertilizer Placement on Root Rot of Canning Peas in Wisconsin 579-590
Mutation in Montmorency cherry—
  barrenness, photosynthetic studies. J. W. Crist 547-553
  bud, variation and correlation. J. W. Crist 393-395

Near-wilt of pea, relation of temperature and moisture to. Walter J. Virgin and J. C. Walker 591-600
NELSON, CASPER L., and BERRIGAN, DOROTHY: Effectiveness of Heat Penetration in the Canning of Meat in the Home by Pressure Cooker 465-474
Neofabraea—
  malicorticis—
    apothecial stages, comparison with those of *Gloeosporium perennans* 660-663
    comparison with *Gloeosporium perennans* 635-663
    culture studies, comparison with *Gloeosporium perennans* 641-655
    synonymy and technical description 659-660
    taxonomy 656-663
  perennans comb. nov.—
    synonymy and technical description 662
    See also *Gloeosporium perennans*.

Page

New York, Adirondack section, cation exchange properties of certain forest soils 491-504
Nicotiana spp., reactions to cabbage mosaic infection 381-385
Nitrogen—
  carriers, effect on nutrition of *Zea mays*, foliar diagnosis study. Walter Thomas and Warren B. Mack 303-313
  compounds, effect on growth of *Aspergillus niger*. Robert A. Steinberg 731-748
  content of oat plant at different stages of growth 334, 342-343
Norfolk sandy loam, soil solution concentration, effect of fertilizers 86-97
Northeastern States, corn earworm pupae overwintering in, temperature and moisture effects. G. W. Barber and F. F. Dicke 711-723
Northern latitudes, temperature, effect on size of pullet eggs, data 446-449
Nurseries, forest. *See* Forest nursery.
Nutrition—
  carbon, of *Aspergillus niger*, relation to trace-element and accessory requirements. Robert A. Steinberg 749-763
  of *Zea mays*, effect of three nitrogen carriers on, foliar diagnosis study. Walter Thomas and Warren B. Mack 303-313

Oak stands, second-growth—
  response to soil treatment, experiments in Connecticut 415-417
  site—
    indices in Connecticut 412-415, 417-421
    quality of, in Connecticut, relation to soil characteristics, topography, and lesser vegetation. Herbert A. Lunt 407-428
Oaks, growing in Connecticut, site quality studies in relation to soil fertility 408-427
Oat—
  crown rust, correlated inheritance of reaction to, and other characters. James H. Torrie 783-804
  plant—
    ash content at different stages of growth 333, 343
    composition of various parts at successive stages of growth with special reference to formation of lignin. Max Phillips, M. J. Goss, B. L. Davis, and H. Stevens 319-366
    constituents, weight at various stages of growth 334-336, 352-359
    extractives, percentages at different stages of growth 336-338
    growth, successive stages, composition of various parts with special reference to formation of lignin. Max Phillips, M. J. Goss, B. L. Davis, and H. Stevens. 319-366
    lignin content, determination 322-326, 342-344
  plants, weight at various stages of growth 349
  smuts, correlated inheritance of reaction to, and other characters. James H. Torrie 783-804
Oats—
  correlated inheritance of reaction to smuts, crown rust, stem rust, and other characters. James H. Torrie 783-804
  crosses—
    disease resistance and other characters, relation 800-801
    inheritance of—
      crown-rust reaction, experiments 788-790
      earliness 799-800
      kernel characters 794-799, 800-801
      smut reaction, experiments 786-788
      stem rust reaction 791-793
    reaction to smuts and rusts, experiments 784-801
  reaction to smuts, crown rust, stem rust, and other characters, correlated inheritance. James H. Torrie 783-804
  seed, in storage, effect of relative humidity on viability, moisture content, and respiration. D. W. Robertson, A. M. Lute, and Robert Gardner 281-291
Oöcysts of *Eimeria arloingi* from domestic sheep, sporulation and viability. John F. Christensen 527-534
Organisms, nongall-forming, related to crown gall bacteria, and production of growth substance on peptone broth. S. B. Locke, A. J. Riker, and B. M. Duggar 519-525

Page

Ovules, of barley, viability after cold storage. Merritt N. Pope 453–463

Painting maple-sugar-producing equipment. C. O. Willets and C. J. Tressler, Jr 151–158
Paints for maple-sugar-producing equipment, comparative value 152–157
Pea—
aphid, feeding, injury to pea vines. C. E. Dieter and H. F. Wilson 805–814
near-wilt, relation of temperature and moisture to. Walter J. Virgin and J. C. Walker 591–600
vines—
blossoms and pods, injury by aphids 812–814
damage by aphids, general effects 806–808
development of adventitious buds, effect of aphids feeding on 814
injury caused by feeding of pea aphid. C. E. Dieter and H. F. Wilson 805–814
stipules, leaves, and internodes, effect of aphids feeding on 808–812
wilt, symptoms, comparison with near-wilt disease 591
Peach aphid, green, transmission of cabbage mosaic virus, tests 385
Peas—
canning, root rot of—
effect of moisture, fertility, and fertilizer placement, in Wisconsin. J. C. Walker and F. L. Musbach 579–590
field experiments in Wisconsin 583–589
greenhouse experiments in Wisconsin 579–583
deterioration rate, effect of temperature on, experiments 42–58
near-wilt, symptoms, comparison with wilt disease 591
sugar losses at different temperatures, experiments 53–57
varieties, relation to symptoms of *Fusarium oxysporum* 593
Pentosans, percentage in oat plant at different stages of growth 339–340
Periplaneta americana—
heart preparations, electrical stimulation—
methods 122–124
response 124–132, 133–136
isolated heart preparations from, electrical stimulation. J. Franklin Yeager 121–137
PHILLIPS, MAX, GOSS, M. J., DAVIS, B. L., and STEVENS, H.: Composition of the Various Parts of the Oat Plant at Successive Stages of Growth, With Special Reference to the Formation of Lignin 319–366
Phoma tuberosa, lesions on potato seed pieces, influence on insect infestation and decay 901–903
Phosphoric acid content of *Zea mays*, foliar diagnosis study 307
Phosphorus compounds, retention by soils as shown by subsequent plant growth. John P. Conrad 507–518
Photoperiodic responses of plants, effects of temperature and other environmental factors upon, further studies. R. H. Roberts and B. Esther Struckmeyer 699–709
Photosynthetic studies of mutational barrenness in Montmorency cherry. J. W. Crist 547–553
Phytomonas insidiosa, cause of bacterial wilt of alfalfa 59, 65
Phytophthora cactorum—
cause of trunk canker or collar rot of apple trees 159, 166–173, 180–181
cultures, differential pathogenicity 173, 180
inoculation of fruit trees and results 167–171, 180–181
isolation from infected apple trees 166–167, 180–181
on apple trees, control 178–179, 181
pathogenicity on Grimes Golden apple trees 167–171, 180–181
physiologic specialization, experiments 171–173, 180–181
relation to collar rot of apple trees 166
Phytophthora collar rot of apple trees. R. C. Baines 159–184

Page

Pigs—
feeding tests in study of hybrid vigor, results 851–854
purebred and crossbred—
birth weights, analysis 850–851
strength at birth, and mortality 851
vigor, breeding experiments 847–854
See also Swine.
Pimiento—
Perfection, roots, growth and distribution in Georgia. H. L. Cochran 185–197
root growth in hotbed, experiments 186–187
roots, growth and—
development, study methods 185–186
distribution in field, experiments 187–197
Pine—
Jeffrey, genetics, study by three-dimensional lattice design 102–118
nursery, design for measuring progeny 102–118
ponderosa—
foliage characteristics, progeny tests 864–872
genetics, study by three-dimensional lattice design 102–118
geographic races, indications of foliage and growth characteristics 879–882
growing in experimental areas and plots for racial tests 862–864
growth characteristics, progeny tests 873–879
needle variations in progeny and parent plants, by localities 864–872
progeny, phenological characteristics, relation to adaptations to given climate, tests 879
races—
adaptability, by regions 880, 881
characteristics, summary 882
suitability for planting in northern Idaho 882–885
racial influence, evidences in 25-year test. R. H. Weidman 855–887
seed-origin localities, climatic data 857–861
Pines—
drought resistance, influence of moisture supply on 1–20
See also Conifers.
Pinus ponderosa. *See* Pine, ponderosa.
Plant—
growth, indication of retention of some phosphorus compounds by soils. John P. Conrad 507–518
species immune to—
and susceptible to infection by *Bacterium solanacearum* 432–434, 437–438
cabbage mosaic virus, list 385
Plants—
photoperiodic responses, effects of temperature and other environmental factors upon, further studies. R. H. Roberts and B. Esther Struckmeyer 699–709
susceptibility to *Bacterium solanacearum* infection, host range studies 429–439
PLATENIUS, HANS: Effect of Temperature on the Rate of Deterioration of Fresh Vegetables 41–58
Pollen, of barley, viability after cold storage. Merritt N. Pope 453–463
POPE, MERRITT N.: Viability of Pollen and Ovules of Barley After Cold Storage 453–463
Potash content of *Zea mays*, foliar diagnosis study 307
Potato—
blackleg—
dissemination, role of insects in. Reiner Bonde 889–917
relation to pathogenic bacteria associated with different stages of seed-corn maggot, cultural studies 893
diseases, dissemination by insects, studies 889–916
seed pieces—
decay—
and insect infestation, influence of various factors on, studies 901–912
dissemination, role of insects in. Reiner Bonde 889–917
effect of bacteria, studies 904–906

Page

Potato—Continued.
seed pieces—Continued.
excessive early drying, effect on decay and infestation by maggots, studies 906-907
field inoculations by contact with seed-corn and potato maggots, studies 895-901
insects commonly attacking in Aroostook County, Me., field observations 914
wound-cork formation, relation to attack by seed-corn maggot, experiments ... 909-912
soft rot bacteria, association with different stages of seed-corn maggot 893-895
yellow dwarf—
epidemiology 270-279
in Wisconsin. J. C. Walker and R. H. Larson 259-280
relation to—
environment 267-270, 278
poor stand 263-267, 278
symptoms 259-263, 278-279
Poultry. *See* Chicks; Pullets.
POWERS, LEROY: Formulas for Determining Theoretical Effects of Certain Genetic Factors Upon Inheritance of Quantitative Characters, With Special Reference to a Study of a *Lycopersicon* Hybrid 555-577
Pressure cooker, home canning of meat, effectiveness of heat penetration. Casper I. Nelson and Dorothy Berrigan 465-474
Proteins—
content in corn, experiments 765-767
crude, content of oat plant at different stages of growth 334, 344-345
Puerto Rico, sugarcane—
infestation by mosaic vectors 76-77
mosaic, transmission by aphids 76-77
Pullets—
eggs from, effect of temperature on size in different latitudes. D. C. Warren 441-452
White Leghorn, winter pause, statistical study. I. Michael Lerner and Lewis W. Taylor 199-210

Quartz sand—
growing millet in. P. L. Gile 619-633
impurities in, cause of reduced yield of millet 624-625
Quercus, growing in Connecticut, site quality studies in relation to soil fertility 408-427
QUINBY, J. R., and STEPHENS, J. C.: The *D Rs P* Linkage Group in Sorghum 725-730

Rabbits, feeding alfalfa for control of sweet-clover disease, experiments 211-215
Racial influences in ponderosa pine, evidences in 25-year test. R. H. Weidman 855-887
Radish, deterioration rate, effect of temperature on, experiments 42-58
Rainfall—
data for Kona district, Hawaii 219-220
effect on coffee yields, Kona district, Hawaii 220-222
records for tobacco growing season—
Florence, S. C., 1933-36 834
Upper Marlboro, Md., 1925-37 834
relation to coffee yield in Kona district, Hawaii. L. A. Dean 217-222
Reductase activity, in lemon peels, effect of different storage temperatures 605-606, 607
REES, CHARLES W., and GARLICK, GEORGE G.: Experimental Transmission of Bovine Venereal Trichomoniasis 769-775
RIKER, A. J., LOCKE, S. B., and DUGGAR, B. M.:
Production of Growth Substance on Peptone Broth by Crown Gall Bacteria and Related Nongall-Forming Organisms .. 519-525
The Nature of Growth Substance Originating in Crown Gall Tissue 535-539
ROBERTS, E., and CARROL, W. E.: A Study of Hybrid Vigor in a Cross Between Poland China and Duroc Jersey Swine 847-854
ROBERTS, R. H., and STRUCKMEYER, B. ESTHER: Further Studies of the Effects of Temperature and Other Environmental Factors Upon the Photoperiodic Responses of Plants 699-709

Page

ROBERTSON, D. W., LUTE, A. M., and GARDNER, ROBERT: Effect of Relative Humidity on Viability, Moisture Content, and Respiration of Wheat, Oats, and Barley Seed in Storage 281-291
Root rot of canning peas, effect of moisture, fertility, and fertilizer placement in Wisconsin. J. C. Walker and F. L. Musbach .. 579-590
ROSS, WILLIAM H., and WHITE, LAWRENCE M.: Effect of Various Grades of Fertilizers on the Salt Content of the Soil Solution 81-99
Rots, apple, comparisons 655-656
Rutabaga—
clubroot inocula from different regions, reaction to, experiments 823-825
varieties, resistance to clubroot. J. C. Walker 815-827

Salt content of soil solution, effect of various grades of fertilizers. Lawrence M. White and William H. Ross 81-99
Sand-soil mixtures, growing millet in. P. L. Gile 619-633
SCHOMER, HAROLD A., and MILLER, ERSTON V.: Physiological Studies of Lemons in Storage 601-607
Seed-corn maggot—
developmental stages, association of pathogenic bacteria with 892-895
habits and life history, studies 890-891
infestation of potatoes, relation to wound-cork formation 909-912
nutrition, role of bacteria, studies 894-895
role in spread of potato diseases 891-892
Seed, storage, effect of relative humidity on viability, moisture content, and respiration. 281-291
Sheep—
coccidia, oöcysts of, sporulation and viability 527-534
coccidiosis, prevention and control, study. 527-534
domestic, oöcysts of *Eimeria arloingi* from, sporulation and viability. John F. Christensen 527-534
SHIRLEY, HARDY L., and MEULI, LLOYD J.: Influence of Moisture Supply on Drought Resistance of Conifers 1-21
Sipha flava, transmission of sugarcane mosaic, experiments 73-78
Sirups—
made from different parts of sorgo stalk at different stages of maturity, jellying and crystallization. Emil K. Ventre, S. Byall, and C. F. Walton, Jr 139-150
maple, lead content, elimination experiments 151-158
starch content, relation to crystallization and jellying, determination 140-150
sugar content, relation to crystallization and jellying, determination 140-150
Site quality of second-growth oak stands, relation to soil characteristics, topography, and lesser vegetation in Connecticut. Herbert A. Lunt 407-428
SMITH, CLAYTON O.: Susceptibility of Species of Cupressaceae to Crown Gall as Determined by Artificial Inoculation 919-925
SMITH, T. E.: Host Range Studies With *Bacterium solanacearum* 429-440
SMITH, WILLIAM K.: The Alleged Protective Action of Alfalfa Against the Hemorrhagic Sweetclover Disease 211-215
Sodium nitrate, effect on nutrition of *Zea mays*, foliar diagnosis study 303-313
Soil—
characteristics, topography, and lesser vegetation, in relation to site quality of second-growth oak stands in Connecticut. Herbert A. Lunt 407-428
dryness, overexposure of conifers to, effect, experiments 17-18
fertility level, influence on winter injury of winter wheat 680-681
kind, relation to occurrence of lesser vegetation, oak stands in Connecticut 421-423

Page

Soil—Continued.
moisture—
effect on—
decay of potato seed pieces attacked by maggots, studies 908–909
overwintering pupae of the corn earworm 711–714
relation to near-wilt of peas, studies in Wisconsin 597–599
sand mixtures, growing millet in. P. L. Gile 619–633
solution, salt content, effect of various grades of fertilizers. Lawrence M. White and William H. Ross 81–99
temperature—
effect on overwintering pupae of the corn earworm 711–712
relation to—
near-wilt of peas, studies in Wisconsin 593–597, 599
yellow dwarf of potatoes 269–270
treatment, effect on second-growth oak stands in Connecticut 415–417
types in New York, Adirondack section, description 492–493
Soils—
forest—
cation exchange properties in Adirondack section. R. F. Chandler, Jr 491–505
exchangeable cations, determination by laboratory methods 493–503
infected with *Bacterium solanacearum*, effect on spread of infection 429–436, 438
retention of some phosphorus compounds as shown by subsequent plant growth. John P. Conrad 507–518
thermal conductivity, effect on mortality of corn earworm pupae 721–722
Solanum demissum—
× *S. tuberosum*—
backcross families 34, 36
F_1 and F_2 families, description 24–28
F_2 plants, chromosome counts 36
interspecific cross, inheritance studies. Catharine L. Becker 23–39
parent and F_2 families, morphological characters 28–34
parents and F_2 families, physiological characters 32–34
description 23–24
Solanum tuberosum—
× *S. demissum*, interspecific cross, inheritance studies. Catharine L. Becker 23–39
description 23–24
Sorghum—
characters, description 726–727
D Rs P linkage group in. J. C. Stephens and J. R. Quinby 725–730
genes—
for juiciness, description 727–729
independence of *D Rs P* group from certain others 729–730
linkage of *D*, *Rs*, and *P* 727–729
plant color, description 727–729
seedling stem color, description 727–729
Sorgo—
sirups, jellying and crystallization, effect of stalk maturity, experiments 139–150
stalk, parts at different stages of maturity, jellying and crystallization of sirups made from. Emil K. Ventre, S. Byall, and C. F. Walton, Jr 139–150
Spinach, deterioration rate, effect of temperature on, experiments 42–58
Starch content of sorgo sirups, relation to crystallization and jellying, determination 140–150
STEINBERG, ROBERT A.:
Effects of Nitrogen Compounds and Trace Elements on Growth of *Aspergillus niger*. 731–748
Relation of Carbon Nutrition to Trace-Element and Accessory Requirements of *Aspergillus niger* 749–763
STEPHENS, J. C., and QUINBY, J. R.: The *D Rs P* Linkage Group in Sorghum 725–730
Sterilization, meat, by pressure cooker, experiments 465–474

Page

STEVENS, H., PHILLIPS, MAX, GOSS, M. J., and DAVIS, B. L.: Composition of the Various Parts of the Oat Plant at Successive Stages of Growth, With Special Reference to the Formation of Lignin 319–366
Stimulation, electrical, of isolated heart preparations from *Periplaneta americana*. J. Franklin Yeager 121–137
Storage—
cold. *See* Cold storage.
of lemons, physiological studies. Erston V. Miller and Harold A. Schomer 601–607
STOREY, W. B., and HARTUNG, M. E.: The Development of the Fruit of *Macadamia ternifolia* 397–406
Streptococcus faecalis in meat, destruction by pressure cooking, experiments 466, 473
STRUCKMEYER, B. ESTHER, and ROBERTS, R. H.: Further Studies of the Effects of Temperature and Other Environmental Factors Upon the Photoperiodic Responses of Plants 699–709
Subtropical regions, temperature, effect on size of pullet eggs, data 445–446
Sucrose, crystallization in sirups made from sorgo stalks, experiments 147, 149, 150
Sugar—
content, of—
lemons in storage, physiological studies. 602–603, 606–607
sorgo sirups, relation to crystallization and jellying, determination 140–150
losses in fresh vegetables at different temperatures, experiments 53–57
maple, producing equipment, preparation and painting. C. O. Willits and C. J. Tressler, Jr 151–158
Sugarcane—
infestation by mosaic aphids in Puerto Rico. 76–77
mosaic, transmission by aphids. H. D. Tate and S. R. Vandenberg 73–79
Sugars, percentage in oat plant at various stages of growth 342
Sweetclover disease, hemorrhagic, alleged protective action of alfalfa against. William K. Smith 211–215
Swine—
cross-breeding for vigor, studies 847–854
Poland China × Duroc Jersey, hybrid vigor, study. E. Roberts and W. E. Carroll 847–854
See also Pigs.

TATE, H. D., and VANDENBERG, S. R.: Transmission of Sugarcane Mosaic by Aphids 73–79
TAYLOR, LEWIS W., and LERNER, I. MICHAEL: A Statistical Study of Winter Pause in White Leghorn Pullets 199–210
Temperature—
air, relation to yellow dwarf of potatoes 268–269
changes, effect on egg size 450–451
effect on—
overwintering pupae of the corn earworm in the Northeastern States. G. W. Barber and F. F. Dicke 711–723
size of eggs from pullets in different latitudes. D. C. Warren 441–452
effects upon photoperiodic responses of plants, further studies. R. H. Roberts and B. Esther Struckmeyer 699–709
rate, effect on deterioration rate of fresh vegetables. Hans Platenius 41–58
relation to—
cabbage mosaic disease 386
near-wilt of pea. Walter J. Virgin and J. C. Walker 591–600
soil. *See* Soil temperature.
THOMAS, WALTER, and MACK, WARREN B.: A Foliar Diagnosis Study of the Effect of Three Nitrogen Carriers on the Nutrition of *Zea mays* 303–313
Thuja, crown gall infection, susceptibility, inoculation studies 919–920, 924
Thujopsis, susceptibility to crown gall infection, inoculation studies 919–920, 924

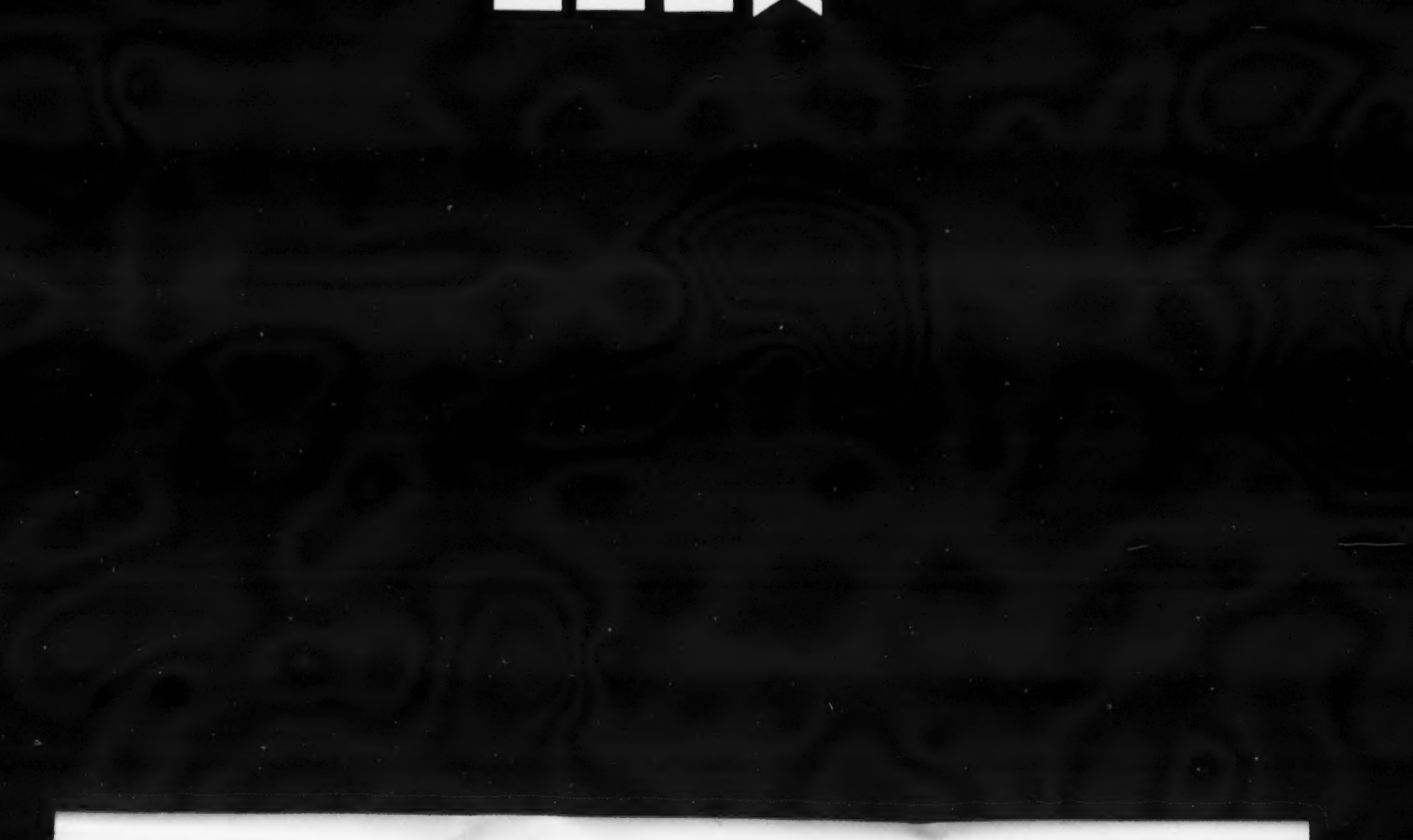
Page

Tobacco—
following bare and natural weed fallow and pure stands of certain weeds. W. M. Lunn, D. E. Brown, J. E. McMurtrey, Jr., and W. W. Garner 829–845
Granville wilt, causal organism, host range, studies 429–439
Tomato hybrids, inheritance of quantitative characters, genetic factors, formulas for determining theoretical effects 555–574
Topography, relation to site quality of second-growth oak stands in Connecticut. Herbert A. Lunt 407–428
TORRIE, JAMES H.: Correlated Inheritance in Oats of Reaction to Smuts, Crown Rust, Stem Rust, and Other Characters 783–804
Trace—
element and accessory requirements of *Aspergillus niger*, relation of carbon nutrition to. Robert A. Steinberg 749–763
elements—
effects on growth of *Aspergillus niger*. Robert A. Steinberg 731–748
factor in increased yield of millet produced by soil admixtures 623–624
TRESSLER, C. J., Jr., and WILLITS, C. O.: The Preparation and Painting of Maple-Sugar-Producing Equipment 151–158
Trichomonas foetus—
infection, control in dairy herds, recommendations 774–775
transmission experiments 769–775
Trichomoniasis, bovine venereal, experimental transmission. Charles W. Rees and George G. Garlick 769–775
Tropical regions, temperature, effect on size of pullet eggs, data 445–446
Turnip—
clubroot inocula from different regions, reaction to, experiments 823–825
varieties, resistance to clubroot. J. C. Walker 815–827

Uronic acids, content of oat plant at different stages of growth 338–339, 360

VANDENBERG, S. R., and TATE, H. D.: Transmission of Sugarcane Mosaic by Aphids 73–79
Van't Hoff's rule, application to deterioration of fresh vegetables in storage 49–50
Vegetables, fresh, deterioration rate, effect of temperature on. Hans Platenius 41–58
Vegetation, lesser, relation to site quality of second-growth oak stands in Connecticut. Herbert A. Lunt 407–428
VENTRE, EMIL K., BYALL, S., and WALTON, C. F., Jr.: Jellying and Crystallization of Sirups Made From Different Parts of the Sorgo Stalk at Different Stages of Maturity 139–150
Vetch, hairy—
foliage infections by *Ascochyta pisi*, reduction by seed treatments 692–694
infected with *Ascochyta pisi*, relation of pod spots to 689–690
seed—
chemical treatments for control of *Ascochyta pisi*, experiments 691–692
coats, impermeability, relation to fungus-seed associations 688
longevity, comparison with that of *Ascochyta pisi* 688
seeds—
Ascochyta pisi in, occurrence and longevity. Willard Crosier 683–697
fungi occurring in 694
Vicia spp., seeds, fungi infecting 694
VIRGIN, WALTER J., and WALKER, J. C.: Relation of Temperature and Moisture to Near-Wilt of Pea 591–600

WALKER, J. C.:
Resistance to Clubroot in Varieties of Turnip and Rutabaga 815–827
and LARSON, R. H.:
A Mosaic Disease of Cabbage 367–392
Yellow Dwarf of Potato in Wisconsin 259–280
and MUSBACH, F. L.: Effect of Moisture, Fertility, and Fertilizer Placement on Root Rot of Canning Peas in Wisconsin 579–590
and VIRGIN, WALTER J.: Relation of Temperature and Moisture to Near-Wilt of Pea 591–600
WALTON, C. F., Jr., VENTRE, EMIL K., and BYALL, S.: Jellying and Crystallization of Sirups Made From Different Parts of the Sorgo Stalk at Different Stages of Maturity 139–150
WARREN, D. C.: Effect of Temperature on Size of Eggs From Pullets in Different Latitudes 441–452
Weed fallow—
natural, and pure stands of certain weeds, tobacco following. W. M. Lunn, E. E. Brown, J. E. McMurtrey, Jr., and W. W. Garner 829–845
value to subsequent tobacco crop 838–844
Weeds, common species, effects on subsequent tobacco crop, experiments 831–832, 839, 841
WEIDMAN, R. H.: Evidence of Racial Influence in a 25-Year Test of Ponderosa Pine 855–887
Wheat—
seed, in storage, effect of relative humidity on viability, moisture content, and respiration. D. W. Robertson, A. M. Lute, and Robert Gardner 281–291
winter, root characteristics in relation to winter injury, further studies. C. A. Lamb 667–681
WHITE, LAWRENCE M., and ROSS, WILLIAM H.: Effect of Various Grades of Fertilizers on the Salt Content of the Soil Solution 81–99
WILLITS, C. O., and TRESSLER, C. J., Jr.: The Preparation and Painting of Maple-Sugar-Producing Equipment 151–158
WILSON, H. F., and DIETER, C. E.: Injury to Pea Vines Caused by the Feeding of the Pea Aphid 805–814
Wilt, Granville, causal organism, host range studies 429–439
Winter—
injury, winter wheat, relation to root characteristics, further studies. C. A. Lamb 667–681
pause, in White Leghorn pullets, statistical study. I. Michael Lerner and Lewis W. Taylor 199–209
Wisconsin—
canning peas, effect of moisture, fertility, and fertilizer placement on root rot. J. C. Walker and F. L. Musbach 579–590
potato yellow dwarf in. J. C. Walker and R. H. Larson 259–280

YEAGER, J. FRANKLIN: Electrical Stimulation of Isolated Heart Preparations From *Periplaneta americana* 121–137
Yellow dwarf of potato. *See* Potato, yellow dwarf.

Zea mays, nutrition—
effect of three nitrogen carriers on, foliar diagnosis, study. Walter Thomas and Warren B. Mack 303–313
intensities, and composition of NPK units, foliar diagnosis study 309–312